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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/698,409	11/03/2003	Akiomi Kunisa	65933-049	3440

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EXAMINER	
MACKOWEY, ANTHONY M	
ART UNIT	PAPER NUMBER
2624	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/698,409	KUNISA, AKIOMI	
	Examiner	Art Unit	
	Anthony Mackowey	2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 March 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-26* is/are pending in the application.

4a) Of the above claim(s) *8-19 and 21-26* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3,6,7 and 20* is/are rejected.

7)☒ Claim(s) *4 and 5* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *03 November 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *11/3/03; 3/12/07*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

Applicant's election without traverse of embodiment 3 corresponding to claims 1-7 and 20 in the reply filed on March 30, 2007 is acknowledged.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

The USPTO "Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility" (Official Gazette notice of 22 November 2005), Annex IV, reads as follows:

> Descriptive material can be characterized as either "functional descriptive material" or "nonfunctional descriptive material." In this context, "functional descriptive material" consists of data structures and computer programs which impart functionality when employed as a computer component. (The definition of "data structure" is "a physical or logical relationship among data elements, designed to support specific data manipulation functions." The New IEEE Standard Dictionary of Electrical and Electronics Terms 308 (5th ed. 1993).) "Nonfunctional descriptive material" includes but is not limited to music, literary works and a compilation or mere arrangement of data.
>
> When functional descriptive material is recorded on some computer-readable medium it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized. Compare In re Lowry, 32 F.3d 1579, 1583-84, 32 USPQ2d 1031, 1035 (Fed. Cir. 1994) (claim to data structure stored on a computer readable medium that increases computer efficiency held statutory) and Warmerdam, 33 F.3d at 1360-61, 31 USPQ2d at 1759 (claim to computer having a specific data structure stored in memory held statutory product-by-process claim) with Warmerdam, 33 F.3d at 1361, 31 USPQ2d at 1760 (claim to a data structure per se held nonstatutory).
>
> In contrast, a claimed computer-readable medium encoded with a computer program is a computer element which defines structural and functional interrelationships between the computer program and the rest of the computer which permit the computer program's functionality to be realized, and is thus statutory. See Lowry, 32 F.3d at 1583-84, 32 USPQ2d at 1035.

Claim 20 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter as follows. Claim 20 defines a computer program embodying

functional descriptive material. However, the claim does not define a computer-readable medium or memory and is thus non-statutory for that reason (i.e., "When functional descriptive material is recorded on some computer-readable medium it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized" – Guidelines Annex IV). That is, the scope of the presently claimed computer program can range from paper on which the program is written, to a program simply contemplated and memorized by a person. The examiner suggests amending the claim to embody the program on "computer-readable medium" or equivalent in order to make the claim statutory. Any amendment to the claim should be commensurate with its corresponding disclosure.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 6 and 7 are rejected under 35 U.S.C. 102(b) as being anticipated by JP 2002-082612 to Mizutani et al. ("Mizutani") cited in Applicant's IDS.

Regarding claim 1, Mizutani discloses a digital watermark embedding apparatus comprising (paragraph 12):

a first embedding block which embeds a first digital watermark in a host data (paragraphs 12 and 13, copyright embedding circuit 1); and

a second embedding block which embeds information on watermarking location of the first digital watermark, as a second watermark, into the host data in which the first digital watermark has been embedded (paragraphs 12 and 13, positioning embedding circuit 2).

Regarding claim 6, Mizutani discloses a digital watermark extracting apparatus comprising (paragraph 15):

a first extracting block which extracts a first digital watermark from a twice-watermarked host data and translates the first digital watermark into information on watermarking location of a second watermark (paragraphs 15, 16, 21 and 22);

a removing unit which removes the first digital watermark from the host data (paragraphs 16, 21 and 22); and

a second extracting block which extracts the second digital watermark from the host data from which the first digital watermark has been removed by the removing unit according to the information on the watermarking location (paragraphs 15-17 and 22).

Regarding claim 7, Mizutani further discloses the first extracting block comprising:

an extracting unit which extracts a scrambled watermark from the twice-watermarked host data (paragraphs 21-25 and 31); and

a descrambling unit which descrambles the scrambled watermark and obtains the information on the watermarking location of the second watermark (paragraphs 21-25 and 31).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over JP 2002-082612 to Mizutani et al. ("Mizutani").

Regarding claim 20, Mizutani discloses extracting a first digital watermark from a twice-watermarked host data and translating the first digital watermark into information on watermarking location of a second watermark (paragraphs 15, 16, 21 and 22);

removing the first digital watermark from the host data (paragraphs 16, 21 and 22); and

extracting the second digital watermark from the host data from which the first digital watermark has been removed according to the information on the watermarking location (paragraphs 15-17 and 22).

Mizutani further discloses the watermarking system embeds information in digital works such as image and voice (paragraph 1) but does not explicitly disclose a computer program executable by a computer, however the Examiner takes Official Notice that a computer program executable by a computer is well known in the art of image processing for digital watermark embedding and detection. It would have been obvious to one of ordinary skill in the art at the time the invention was made that the apparatus and method taught by Mizutani could be implemented using a conventional computer executing a computer program the computer is capable of performing the computations required of the watermark technique quickly, efficiently

and accurately. A conventional computer inherently requires program instructions to operate and implement a method.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 2 and 3 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1 and 5 of copending Application No. 11/222776 (US-PGPUB) in view of Mizutani.

Mizutani discloses all the limitations of claim 1 of the present application (see rejection above).

Regarding claim 2, claim 1 of the copending application discloses a location information generating unit which generates a plurality of candidate locations of the host data in which a digital watermark is to be embedded (lines 2-4);

an embedding unit which embeds the first digital watermark in the respective candidate locations of the host data and generates a plurality of candidates for a watermarked host data (lines 5-8);

an evaluating unit which evaluates robustness of the digital watermark hidden in the respective candidates for the watermarked host data (lines 9-15); and

a selecting unit which selects one of the plurality of the candidates for the watermarked host data according to the evaluated robustness and outputs the selected one as the host data in which the digital watermark is embedded (lines 16-18).

Regarding claim 3, claim 5 of the copending application discloses a scrambling unit which scrambles the information on the watermarking location and generates a plurality of candidate watermarks (lines 2-4);

an embedding unit which embeds the respective candidate watermarks in the host data and generates a plurality of candidates for a watermarked host data (lines 5-7);

an evaluating unit which evaluates robustness of the respective candidate watermarks hidden in the respective candidates for the watermarked host data (lines 8-14); and

a selecting unit which selects one of the plurality of the candidates for the watermarked host data according to the evaluated robustness (lines 15-17).

The claims 1 and 5 of the copending application do not disclose the details of claim 1 and therefore do not recite "first" and "second" elements recited in claims 2 and 3. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of claims 1 and 5 of the copending application to include a first and second watermark embedding apparatus as taught by Mizutani thus resulting in claims 2 and 3 because it enables the detection apparatus to extract the embedded information even when some of the image data is cut off or missing (Mizutani, paragraph 1), thus making the embedded information more robust.

This is a provisional obviousness-type double patenting rejection.

Allowable Subject Matter

Claims 4 and 5 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The features, as explicitly recited in the claims, in combination with the other elements of the base claims and intervening claims are neither disclosed nor suggested by the prior art of record.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Please see Notice of References Cited.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anthony Mackowey whose telephone number is (571) 272-7425. The examiner can normally be reached on M-F 9:00-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bella Matthew can be reached on (571) 272-7778. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

AM
5/13/07

ANDREW W. JOHNS
PRIMARY EXAMINER